

February 8, 1961

Dr. Kenneth V. Thimann
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The Biological Laboratories
16 Divinity Avenue
Cambridge 38, Massachusetts

Dear Kenneth:

This is in reply to your note of February 3. It is always a pleasure to receive some evidence that someone has carefully read one's writing. I am afraid that some of the great clarity that you refer to must have escaped from this particular section. Actually, I believe I am making almost the same criticism of the primitive character of DNA as I would infer from your letter and in the next paragraph after the one you quote, I remark that this improbability makes us look for alternative solutions to the origin of life. Indeed my own hunch, like yours, is that "DNA has evolved from a simpler, spontaneously condensing polymer." I think I would insist on the existence of a polymer containing biological specifications and think that this may be implicit in your own remark about "divided up vegetatively."

In looking over this section again, I am sorry to see that the argument has been compressed to the point of ambiguity. There may also be some mis-placed or arguable commas. If I have to explain that section again, I would reason that I had more or less defined organism as the stage of evolution which was characterized by DNA replication and was then asking whether this arose de novo or whether it had in turn evolved from some "pre-organism" stage. In this context, the term "primaeval" may well be misleading. My own hunch for the primaeval gene is that it was a polypeptide containing basic and acidic amino acids. Don't ask me to prove this.

Yours cordially,

Joshua Lederberg
Professor of Genetics